X11 Forwarding

Category: Productivity Hints

DRAFT

This article is being reviewed for completeness and technical accuracy.

To run X applications (such as xclock, emacs, totalview, etc) on the X client host (for example, a NAS computer such as pfe1, etc.) and display them back to an X server (such as your localhost), the simplest way is to use SSH X11-Forwarding.

If you are using a NAS-supported workstation or compute server, X11-Forwarding is already set up for you. The following command activates SSH X-11 Forwarding automatically:

```
your_localhost% ssh hostname.nas.nasa.gov
```

Most modern SSH client software support this option (for example, Cygwin,TeraTerm, PuTTY, Unix, and Linux). To use SSH X11-Forwarding, the ssh server-side daemon (sshd) configuration file must contain the entry

```
X11Forwarding yes
```

to support the forwarding capability. All NAS-supported hosts (including bouncer, bruiser, all workstations and compute servers) honor this setting in the default *sshd_config* file (for High End Computing systems and Linux systems, it is */etc/ssh/sshd_config*; for Mac systems, it is */etc/sshd_config*) For other non-NAS machines, ask your system administration to set this in the sshd_config file.

In addition to setting "X11Forwarding yes" on the SSH server side (for example, a NAS machine), it is recommended that "ForwardX11 yes" is also set in the *ssh_config* file on the SSH client host (for example, your localhost). By default, NAS and HEC system configurations will enable these settings for both client and server. If "ForwardX11 yes" is not set in the *ssh_config* file by the system administrator of your localhost, you can set it in your *~/.ssh/config* file or use the "-X" option of SSH.

Other parameters related to the performance of X11-Forwarding are handled by the NAS-recommended *ssh_config* file. If you are on a NAS-supported system, no action is needed in setting these parameters yourself. If your localhost is not supported by NAS and you would like to get configuration ideas, you can look at */etc/ssh/ssh_config* on any NAS High-End-Computing systems (such as cfe2, pfe[1-12], bridge[1-2]).

Example:

To run an X11-based application, for example, xclock, on pfe1.nas.nasa.gov, and have it displayed on your localhost, do the following:

```
your_localhost% ssh pfe1.nas.nasa.gov
------------------------------------------------------

      * * *  W A R N I N G     W A R N I N G * * *

                U.S. GOVERNMENT COMPUTER
 If not authorized to access this system, disconnect NOW.
....
------------------------------------------------------
                     ** PFE1 **
....

pfe1% xclock
```

If you usually go through bouncer.nas.nasa.gov or bruiser.nas.nasa.gov to get to the other NAS systems, SSH X11-Forwarding works as in the following example:

```
your_localhost% ssh bouncer.nas.nasa.gov
bouncer% ssh a_nas_desktop
a_nas_desktop% xclock
```

If "ForwardX11 yes" is not set in either the *ssh_config* file or the ~/.ssh/config file of your localhost, use:

```
your_localhost% ssh -X hostname.nas.nasa.gov
```

The SSH daemon sets the DISPLAY environment variable by itself. DO NOT RESET it to point to display zero (ex: setenv DISPLAY your_localhost:0), otherwise SSH X11-Forwarding will not work.

For each new login, the *.Xauthority* file gets updated. If you are over your quota, this file cannot be updated and X11-Forwarding will not work.

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http://www.nas.nasa.gov/hecc/support/kb/entry/256/?ajax=1